



February 13, 2015

NATIONAL ENGINEERING HANDBOOK PART 651
AGRICULTURAL WASTE MANAGEMENT FIELD HANDBOOK
NOTICE WI-42

Chapter 10 of the Agricultural Waste Management Field Handbook (AWMFH) contains the approved pre-engineered waste storage facilities or components. This notice transmits an addition of a waste storage facility from Dalmaray Precast Concrete Products.

Filing Instructions:

Remove:

Directive Tabulation Sheet, dated October 2014

Insert:

Directive Tabulation Sheet, dated February 2015

Page: 10-WI-11 and 12, Dalmaray Precast Concrete Products

Wisconsin supplements and transmittal notices for the AWMFH can be found on the Wisconsin NRCS web site at <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/>.

A handwritten signature in blue ink that reads "Jimmy Bramblett". The signature is stylized with a large, flowing "J" and "B".

JIMMY BRAMBLETT
State Conservationist

Attachments

**DALMARAY PRECAST CONCRETE PRODUCTS
PRECAST CONCRETE T-PANELS FOR MANURE STORAGE
(12'-6" High)**

Fabricator: Dalmaray Precast Concrete Products
405 S. Arch Street
Janesville, WI 53548 (608) 752-6507

Designer: Gary K. Munkelt, P. E.
Gary K. Munkelt & Associates
North Wales, Pennsylvania

**Drawings and
Installation
Manual:** Gary K. Munkelt and Associates prepared a design and drawings for precast concrete 12'-6" tall T-panels. Dalmaray Precast Concrete Products prepared a construction manual dated January 26, 2015. The design for the panel system was sealed and signed by Gary K. Munkelt, P.E. and dated February 5, 2015.

Materials: The structure is precast concrete, 6000 psi, reinforced with Grade 60 steel bars and Grade 80 welded wire fabric. The floor slab is 3500 psi concrete.

The manure panels are bolted together with two layers of Con Seal CS-231 (or equivalent), controlled expansion sealant, placed between the panel units. An elastomeric sealant is applied to the inside of the joint surface. Anchor bolts connect the panel to the floor concrete. The structure floor is poured over the panel base.

A closure panel is used to complete the structure perimeter. Horizontal reinforcing bars are drilled and epoxied into the adjacent panels to facilitate the closure concrete pour. Vertical reinforcement is added to match the adjoining precast panel reinforcement. The closure panel is to be 6000 psi.

**Design
Assumptions:** The weight of the soil used in the design was 110 psf. A lateral earth pressure of 85 psf./ft. of depth was assumed.

The maximum height of backfill is 10'- 6".

The minimum height of backfill is 3'- 0".

The minimum required panel footing bearing pressure is 2800 psf.

No concentrated loads due to machinery are allowed within 6 feet of the panel wall.

The maximum filling capacity assumed in the panel design was 1 foot below the panel top. In addition, the floor slab is poured over the panel base. This further reduces the available storage depth in the unit by 11 inches. Therefore, the total depth available for manure storage volume computations is 10.6 feet.

Product Use:

The design provided by Dalmaray Precast Concrete Products engineering consultant is considered to be a "standard drawing". No changes or additions are allowed without the approval of the designer, Gary K. Munkelt, P. E.

The design and drawings may be incorporated into a site-specific construction plan prepared and approved by a private engineer or agency staff (siting engineer). The preparer of the construction plan is responsible for siting the structure in compliance with WI Standard 313, affirming the foundation soils meet the bearing pressure required in the design, and providing the design and construction drawings for a waste transfer system in compliance with WI Standard 634.

Dalmaray Precast Concrete Products will provide the siting engineer a signed statement that the structure was constructed in accordance with the panel design drawing and provide documentation that the cast in place concrete was in compliance with WI Construction Specification 4, Concrete.

Review and Acceptance:

A review of the structural design submitted by the consulting engineer was performed by NRCS staff at the National Design Center in Fort Worth, Texas. The State Conservation Engineer in Wisconsin accepts that the design submitted meets the structural requirements of NRCS Standard 313.

Conditions of Wisconsin Approval: Dalmaray Precast Concrete Products design and installation manual requires that the wall panels and floor be placed on a gravel base material.

Soils under the gravel base material must meet Wisconsin NRCS Standard 313 (WI Standard 313) Table 1 or Table 2. Soils that are imported to satisfy Table 2 must be extended 3 feet beyond the wall panel base.

Soils placed against the panel sides must meet WI Standard 313 Table 5 (Concrete Composite).

DIRECTIVE TABULATION SHEET

Title No. 210

**Directive Name/Type: Agricultural Waste Management Field Handbook
Wisconsin**

Directive Number	Issue Date	Part, Subpart, Pages, etc., or Bulletin Subject
WI-1	9/8/1992	Issues interim instructions for filing previous AWMFM WI supplements.
WI-2	11/3/1992	Instructions for filing AWMFM supplements.
WI-3	3/18/1994	Superseded by WI-14.
WI-4	10/11/1994	Canceled by National Revision.
WI-5	2/1995	Superseded by WI-18.
WI-6	2/1995	Superseded by WI-35.
WI-7	2/1995	Superseded by WI-20.
WI-8	2/1995	Superseded by WI-20.
WI-9	2/1995	Canceled by WI-25.
WI-10	2/1995	Superseded by WI-20.
WI-11	2/1995	Superseded by WI-35.
WI-12	2/23/1995	Change Notices 5-11, correct Notice 3.
WI-13	4/20/1995	Chapter 1 DATCP-DFS Regional Offices map.
WI-14	2/12/1999	Chapter 13, Manure Storage Safety, ASAE Publication.
WI-15	3/1/1999	Superseded by WI-18.
WI-16	3/16/1999	Chapter 13 Documents Reissued due to copy problems.
WI-17	4/15/1999	Chapter 16 USGS Fact Sheet on Barnyards.
WI-18	10/06/1999	Superseded by WI-25.
WI-19	1/13/2000	Superseded by WI-35.
WI-20	12/11/2001	Chapter 9 Supplements.
WI-21	1/23/2002	Chapter 9, WI-9-9 Corrections, Chapter 10, Companion Document 313-12 reissued (Superseded by WI-25).
WI-22	2/14/2002	Superseded by WI-25.
WI-23	5/12/2003	Superseded by WI-25.
WI-24	4/14/2004	Superseded by WI-25.
WI-25	1/26/2005	Chapter 10, Revised Standard 313 Companion Documents (All). (Companion Document 313-8 Superseded by WI-31)
WI-26	10/3/2005	Superseded by WI-29
WI-27	12/1/2005	Chapter 10, Revised Companion Document 313-10.
WI-28	11/20/2007	Superseded by WI-29
WI-29	8/1/2008	Chapter 10, Revised Companion Documents 635-1 through 4 (Companion Documents 635-1 through 3 Superseded by WI-30). Companion Document 629-1. (Superseded by WI-34).
WI-30	11/26/2008	Chapter 10, Revised Companion Documents 635-1 through 3.

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Title No. 210

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Directive Number	Issue Date	Part, Subpart, Pages, etc., or Bulletin Subject
WI-31	4/16/2009	Chapter 10, Revised Companion Document 313-8.
WI-32	5/14/2009	Chapter 10, Remove Companion Document 635-4.
WI-33	11/2/2012	Chapter 10, Companion Document 634.
WI-34	11/6/2012	Chapter 10, Companion Document 629-1.
WI-35	1/14/2014	Chapter 10, Remove all existing supplements. Insert revised animal lot area space guidelines.
WI-36	2/6/2014	Chapter 10, Insert pages, 10-WI-3 and 4, Huffcutt Channels
WI-37	2/10/2014	Superseded by WI-40
WI-38	2/21/2014	Chapter 10, Insert pages 10-WI-7 and 8, FSRC Tanks, Inc.
WI-39	2/26/2014	Superseded by WI-41
WI-40	3/24/2014	Chapter 10, Insert pages 10-WI-5 and 6, CST Tank (formerly AO Smith Harvestore)
WI-41	10/3/2014	Chapter 10, Insert revised pages 10-WI-9 and 10, Pipping Concrete.
WI-42	2/13/2015	Chapter 10, Insert pages 10-WI-11 and 12, Dalmaray Precast Concrete Products.